REMARKS

In the Office Action mailed December 6, 2010, the Examiner re-opened prosecution in light of Applicant's previously filed Appeal Brief.

In the Action, the Examiner rejected Claims 11-13, 15-16, 18-21, 23-24, 26-32, 39-41, 43-45, 47-49, 51, 53-58, and 60-62 for alleged obviousness over WO 02/38686 to Maze, et al. in view of US 2002/0142611 to O'Donnell et al.

The Examiner rejected Claim 52 for alleged obviousness based upon Maze and O'Donnell and further in view of US 5,250,325 to Phillips et al.

Claim 59 was rejected for alleged obviousness based upon Maze and O'Donnell and further in view of US 5,879,649 to Wataya et al.

Applicant appreciates the careful and thoughtful review of the application by the Examiner. In view of the reasons and explanations presented below, it is respectfully submitted that all pending Claims 11-13, 15, 16, 18-21, 23, 24, 26-32, 39-41, 43-45, 47-49 and 51-62 are patentable over the cited art and in condition for allowance. A Declaration under Rule 132 is enclosed herewith in support of the patentability of independent claim 11 and all claims dependent therefrom. New claims 63-133 are also presented herein, all of which are respectfully submitted to be in condition for allowance.

A. Interview.

Applicant appreciates the helpful interview conducted between the Examiner and Applicant's attorney, conducted on June 1, 2011. The present response is believed to be in accordance with that interview.

B. Rejection of Claims 11-13, 15, 16, 18-21, 23-24, 26-32, 39-41, 43-45, 47-49, 51, 53-58, and 60-62 Must be Withdrawn.

These claims were rejected for alleged obviousness based upon WO 02/38686 to Maze et al. in view of US 2002/0142611 to O'Donnell et al..

The claimed compositions, as recited by the currently pending claims, call for a particular weight percentage concentration of a certain reinforcing agent in the form of an oxide. Specifically, the reinforcing agent is selected from yttrium oxide, zirconium oxide, lanthanum oxide, cerium oxide, praseodymium oxide, and neodymium oxide.

As explained in the present application, it is believed that the presence of at least one of the previously recited oxides in the claimed composition serves to reinforce the efficacy of the anticorrosion protection imparted by the particulate metal in the composition. That is, the anticorrosion properties of a system using sacrificial protection by a particulate metal, can be significantly increased by incorporation of one or more of the noted elements, in the form of oxides. As demonstrated in the testing results presented on pages 8-16 of the application, incorporation of one or more of these elements in the claimed compositions significantly improved their anticorrosion properties, as indicated for example, by resistance to salt spray.

The reference to Maze et al. fails to teach, describe or even suggest the particular oxide forms of these reinforcing agents utilized in the recited weight proportions in a coating composition.

1. Additional Deficiencies of WO '686 to Maze et al.

Maze et al. (WO 02/38686) disclose an anticorrosion coating composition comprising at least one particulate metal, an organic solvent, a thickener, a silane-based binder, molybdenum oxide and water.

The document to Maze et al. entirely fails to teach or even suggest a reinforcing agent for the anticorrosion properties of the composition selected from the group consisting of yttrium, zirconium, lanthanum, cerium, praseodymium, in the form of oxides.

In the previous final Action, the Examiner admitted that the primary reference, i.e., Maze et al., fails to teach the recited reinforcing agents in oxide form:

> Maze et al. do not expressly teach a reinforcing agent for the anticorrosion properties of the composition selected from the group consisting of yttrium, zirconium, lanthanum, cerium, praseodymium and neodymium, in the form of oxides.

Pages 4 and 12 of Office Action mailed April 7, 2010.

2. Deficiencies of US '611 to O'Donnell et al.

O'Donnell et al. (US 2002/0142611) is directed to a ceramic material comprising cerium oxide provided to promote corrosion resistance. The ceramic material is applied to surfaces of components used in processing semiconductors, such as components in a plasma processing reactor chamber, see [0022] of the '611 publication.

The '611 publication describes cerium oxide as the primary ingredient in the ceramic material; see [0023]. The ceramic material may also include zirconia or yttria. O'Donnell continues and notes that the ceramic material which contains cerium oxide provides "erosion resistant surfaces" and which are resistant to both physical attack such as ion sputter induces erosion and chemical attack by the plasma, see [0025].

The '611 publication explains that the cerium oxide ceramic material is used as a coating, see [0026]. The coating is preferably applied by plasma spraying, see [0027]. In this technique, a powdered coating material is injected into a high temperature plasma frame. The material is rapidly heated and accelerated to a high velocity prior to impacting a substrate surface. Upon rapidly cooling, the ceramic material forms a coating, see [0028].

In summary, the '611 publication to O'Donnell et al. teaches a coating composition that is very different from that recited in the pending claims. Furthermore, the coatings taught by O'Donnell are for significantly different fields of art and applications than the compositions of the pending claims. The composition taught by O'Donnell is not aqueous. Furthermore, O'Donnell's composition is as pure as possible in that it includes only minimal amounts of contaminating elements such as transition metals, alkali metals, or the like, see [0024]. In sharp contrast, the presently claimed compositions comprise one or more particulate metals. Moreover, the teachings by O'Donnell do not concern a composition in which a particulate metal is in suspension and in which the composition is applied as a coating to a metal part, and the particulate metal provides the metal part with sacrificial protection against a corrosive medium.

For at least these reasons, it will be appreciated that the pending claims are distinguishable from both of the cited references to Maze et al. and O'Donnell et al.

3. Improper to Combine the Teachings of Maze et al. and O'Donnell et al.

O'Donnell teaches that the ceramic material should be as pure as possible and include minimal amounts of transition metals:

> [0024] In order to minimize contamination of substrates processed in equipment incorporating one or more components according to the invention, it is desirable for the cerium oxide containing ceramic material to be as pure as possible, e.g., include minimal amounts of contaminating elements such as transition metals, alkali metals or the like. For example, the cerium oxide containing material can be made pure enough to avoid on-wafer contamination of 10^{10} atoms/cm^2 or higher, preferably 10^5 atoms/cm^2 or higher.

Paragraph [0024] of the '611 publication.

Thus, one following the teachings of O'Donnell would be motivated to avoid including transition metals, alkali metals, or the like in a coating composition.

Why then would an artisan look to the teachings of the WO '686 publication to Maze et al.? Maze et al. teach a composition that includes:

- at least on particulate metal,
- an organic solvent;
- a thickener;
- a silane-based binder, preferably carrying epoxy functional groups;
- molybdenum oxide (MoO_3);
- possibly a silicate of sodium, potassium or lithium, and;
- water.

Page 3, lines 11-19 of WO 02/38686 to Maze et al.

Regarding the particulate metal for incorporation in the composition, Maze et al. teach:

> The particulate metal present in the composition may be chosen from zinc, aluminum, chromium, manganese, nickel, titanium, their alloys and intermetallic compounds, and mixtures thereof. It should be pointed out her that if the recommended coating composition is preferably free of Cr^{VI}, it may nevertheless contain a certain proportion of metallic chromium. In practice, it has turned out that the presence of zinc is highly desirable.

Page 3, lines 26-34 of WO '686 to Maze et al.

Thus, Maze specifically teaches the inclusion of the following transition metals: zinc, chromium, manganese, nickel, and titanium. Maze notes that incorporation of the transition metal zinc is "highly desirable."

Therefore, the teachings of the two cited references directly conflict with each other. O'Donnell instructs that transition metals should be avoided while Maze instructs that it is highly desirable to utilize the transition metal zinc.

Furthermore, another reason exists as to why the purported combination of Maze and O'Donnell is improper. In the event that the Examiner views the WO '686 reference to Maze as teaching all the elements of independent Claim 11 at issue but for the recitation "yttrium, zirconium, lanthanium, cerium, praseodymin and neodymium, in the form of oxides"; there is still no teaching in either Maze or O'Donnell to (i) remove MoO_3 from the composition based upon the teachings by O'Donnell. It must be appreciated that the teachings of O'Donnell are for a very different field of art and for significantly different applications than that of the pending claims.

4. Rule 132 Declaration.

Accompanying this response is a Declaration presented in support of the patentability of independent claim 11 and all claims dependent therefrom. This Declaration explains that the claimed reinforcing agents in the form of oxides leads to significantly improved anticorrosion properties. Furthermore, this Declaration provides that the claimed compositions provide superior anticorrosion properties as compared to the compositions described in either or both of the references to Maze et al. and/or O'Donnell, et al.

For at least these reasons it will be appreciated that the present rejection based upon a purported combination of references to Maze and O'Donnell is improper.

C. Rejection of Claim 52 Must be Withdrawn.

Claim 52 was rejected for alleged obviousness based upon Maze, O'Donnell, and Phillips et al. Claim 52 is dependent from independent Claim 11 and so contains all of the recitations of Claim 11.

Thus, the analysis is whether the '325 patent to Phillips et al. remedies the previously noted deficiencies of the purported combination of Maze and O'Donnell.

No. Phillips does not remedy the previously noted deficiencies. Nor does Phillips reconcile the conflicting teachings of Maze and O'Donnell. Instead, Phillips is merely directed to a coating composition containing a very specific class of carboxylic acid salts.

Frankly, the '325 patent has little if any relevance to the subject matter of the pending claims.

Upon further review, it will be appreciated that the present rejection of Claim 52 is insufficient, unsupported, and must be withdrawn.

D. Rejection of Claim 59 Must be Withdrawn.

Claim 59 was rejected for alleged obviousness based upon Maze, O'Donnell, and US Patent 5,879,649 to Wataya et al. Claim 59 is dependent from Claims 41, 18, and 11, and so contains the recitations of those claims.

Again, the analysis is whether the '649 patent to Wataya et al. remedies the previously noted deficiencies of the purported combination of Maze and O'Donnell.

The '647 patent to Wataya et al. is directed to methods for preparing spherical particles of yttrium oxide.

Wataya fail to provide any teaching as to specific compositions for coating metal parts to provide corrosion protection therefor.

It is respectfully submitted that the '647 patent to Wataya et al. does not remedy the noted deficiencies of Maze and O'Donnell. Thus, the present rejection of Claim 59 should be withdrawn.

E. New Claims 63-133.

Applicant also presents new claims 63-133 for the Examiner's consideration. Of these new claims, the only independent claims are claims 63 and 100. New independent claim 63 is identical to independent claim 11 except that claim 63 does not include cerium in the Markush group for the reinforcing agent. Dependant claims 64-99 parallel the currently pending dependent claims. New independent claim 100 is identical to independent claim 11 except that claim 100 does not include yttrium, zirconium, and cerium in the Markush group for the reinforcing agent. Dependent

claims 101-133 parallel the currently pending dependent claims. No new matter is added by any of claims 63-133.

It is respectfully submitted that all new claims 63-133 are patentable over the cited prior art.

F. Conclusion.

In view of the foregoing, it will be appreciated that all rejections must be withdrawn and all pending claims allowed.

Respectfully submitted,

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